

July 21, 2004
Notice of Allowability

Application No.

09/804,210

Examiner

Thomas H. Stevens

Applicant(s)

GOODING ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09804210.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☒ The drawings filed on 12 March 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

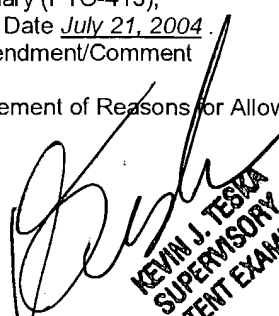
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 3/12/01.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date July 21, 2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date July 21, 2004
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

DETAILED ACTION

1. Claims 1-24 were examined.

Examiner's Amendment

2. Authorization for this examiner's amendment was given in a telephone interview with Scott Stinebruner on July 21, 2004.

In the Specification

- Pg. 9, line 2, insert---**32 are disposed.**

So that the sentence reads: **The respective connections 32 are disposed between buffer card 30 and chips 22.**

- Pg. 9, line 4, delete---Moreover, it will be appreciated that the---insert **The**

So that the sentence reads: **The buffer card may be utilized to interface chips on the same logic board, or on separate logic boards, consistent with the invention.**

- Pg. 12, line 16, delete---It should also be appreciated that, for---insert **For**

So that the sentence reads: **For a complementary array, counter 54 could be used to drive the write pointer for the complementary array, with counter 52 driving the read pointer on behalf of the complementary array.**

- Pg. 13, line 25, delete--From a review of Fig.3, several conditions should be appreciated---insert **To review figure 3:**

So that the sentence reads: **To review figure 3: First, times First, times 7-14 and 20-28 reflect respective pauses during the emulation of clock domains A and B, and illustrate the fact that in the case of a pause in clock domain A, the same data will be read from the XBI pin on successive evaluation cycles in clock domain B (e.g., at times 3-6 and 10-14).**

- Pg.15, lines 4 through 5, delete the phrase---**it will be appreciated that.**

So that the sentence reads: **In addition, while signals are illustrated as being one-bit binary signals, a signal and signal path (and thus a stack and buffer) may have varying binary widths.**

Reasons for Allowance

3. Claims 1-24 have been allowed over prior art of record.

The following is an examiner's statement of reasons for allowance:

The applicant details a series of steps to utilize a buffer interposed in a common signal path between asynchronous clock domains in order to manage communication of time-multiplexed data signals between the asynchronous clock domains during

hardware-based emulation (e.g., claim 1). The buffer is used to latch each data signal (see figure 1, 30) communicated across the common signal path so that the clock domain that receives the signals can retrieve each such signal at appropriate points in the receiver clock domain's evaluation cycle (pg.5, lines 1-9, with figure 2.). This is the scope of the invention which distances it self from other related art.

The closest prior art is Chilton et al., (U.S. Patent 5,923,865 (1999)) which teaches logic emulation of a circuit with links to the various processors; but doesn't teach such a structure to include an asynchronous buffer. Additionally, Chen et al., (U.S. Patent 5,649,167 (1997)) teaches a method and structure for implementing integrated circuits designs into a plurality of clocked and unclocked reprogramable logic circuits; however, this invention does not teach two wire links from two different rows of emulation processors to the asynchronous buffer card. Based on these facts, the examiner considers the invention novel based on , for example, that one signal path is used to transmit all of the signals during each evaluation cycle (pg. 8, lines 13-14) coupled with the signal compatibility process between the source and the plurality of receivers via the buffer (pg. 11, lines 13-23; and pg. 11-12, lines 28-31, 1-11, respectively).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

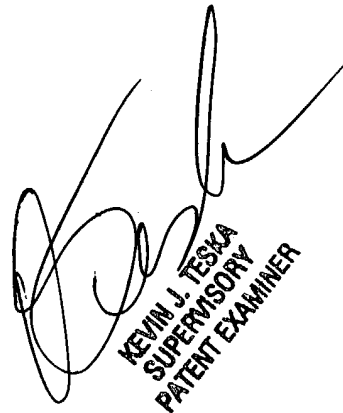
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is (703) 305-0365, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Kevin Teska at (703) 305-9704. The fax number for the group is 703-872-9306.

Any inquires of general nature or relating to the status of this application should be directed to the Group receptionist whose phone number is (703) 305-3900.

July 20, 2004

THS



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